

## Claims

1. Measuring device, especially temperature measuring transducer, with an electrical resistor (RS), which varies its value depending on a chemical or physical variable, and which is  
5 connected by at least three lines (L1...L4) to an evaluation device (A), through which the lines (L1...L4) can be checked for a line break, characterized in that the evaluation device (A) is embodied such that, for a break in a first line (L1) of two lines (L1, L2) which are connected on the same side (S1) of the  
10 resistor (RS), a measurement of the resistance value using the first defective line (L1) can be conducted with the other, second line (L2) in each case, by both routing the current conducted through the resistor (RS) via the second line (L2) and also by tapping off the falling voltage with the second line  
15 (L2).
2. Measuring device in accordance with claim 1, characterized in that the evaluation device (A) is further designed so that the influence of the line resistance (RL2) of the second line (L2) on the measuring result can be compensated for.
- 20 3. Measuring device in accordance with claim 1 or 2, characterized in that the evaluation device (A) features a control and processing unit (SR) and at least one switchable current source (I1, I2) such that the current source (I1, I2) for line checking is optionally switchable to one of two lines  
25 (L1, L2) respectively, which are connected to a first side (S1) of the measuring resistor (RS), and that the relevant current flowing through the measuring resistor (RS) can be recorded and evaluated to establish a line break.

4. Measuring device in accordance with claim 3, characterized in that the evaluation device (A) furthermore features a controllable switchover unit (SW1, SW2) such that, to check the lines, one of two lines (L3, L4), which are connected to the second side (S2) of the measuring resistor (RS) can be switched in to conduct away a current fed through the current source (I1, I2) into the measuring resistor (RS) and that the relevant current flowing through the measuring resistor (RS) can be recorded and is able to be evaluated to identify a line break.
- 10 5. Measuring device in accordance with one of the previous claims, characterized in that the evaluation device (A) is embodied such that the line resistances (RL1...RL4) can be determined for intact lines (L1...L4).
- 15 6. Measuring device in accordance with one of the previous claims, characterized in that the component of a measuring transducer is suitable for temperature measurement and for use in an automation technology system.